ABSTRACT

The invention provides a method for increasing the specific activity of a glycosyl hydrolase on a substrate, comprising replacing a hydrophobic surface binding amino acid of the hydrolase with a positively charged amino acid; and a method for increasing the specific activity of a glycosyl hydrolase on a substrate, comprising replacing an active site associated glycosyl-stabilizing amino acid of the hydrolase with an amino acid, the replacing amino acid not strongly retarding cellobiose from leaving the active site. The invention further provides mutant glycosyl hydrolases, which include Y245G, Y42R, and W82R.